REMARKS/ARGUMENTS

The Applicants would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office action, and amended as necessary to more clearly and particularly describe the subject matter in this application.

New claims 11-16 have been added. Support for claims 11 and 14 is found in paragraph 0070 of the published application (U.S. Publication No. 2007/0119841). Support for claims 12 and 15 is found in paragraph 0179 of the published application. Support for claims 13 and 16 is found in paragraph 0163 of the published application.

Claim 1 has been amended to include the limitation "the dedicated separation control system is always connected to the position control system, and the controller outputs a velocity command relating to a welding torch pull-up operation to the dedicated separation control system only when the welding torch is moved in the direction separating from the workpiece" from claim 3. Claim 3 has therefore been cancelled. Claim 6 has been amended to include the limitation "the dedicated separation control system is always connected to the position control system, and a velocity command relating to a welding torch pull-up operation is outputted to the dedicated separation control system only when the welding torch is moved in the direction separating from the workpiece" from claim 8. Thus, claim 8 has been cancelled. Claim 9 has been amended to include the limitation of preventing "erroneous collision detection". Support for this limitation is located in paragraph 0238 of the published application.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph. Applicants have amended the preamble of claim 4 to clarify that a method is claimed using the system claimed in claim 1. Withdrawal of the rejection is respectfully requested.

Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Uesono et al. (JP Publication No. 2002-205169) hereinafter "Uesono".

Uesono fails to disclose that "the controller includes, separately from the position control system, a dedicated separation control system" as limited in independent claims 1 and 6. The Examiner alleges that elements RC and MC in FIGS. 2 and 3 of Uesono disclose a controller (RC) having a position control system and "a dedicated separation control system" (MC). The Applicant respectfully disagrees.

Uesono fails to disclose "a dedicated separation control system" that is "separate from the position control system". Applicant asserts that Uesono merely discloses a controller (RC) with a position control system (MC). Uesono elaborates on the function of MC stating "The motion-control circuit MC will output the motion control signal Mc to which manipulator RM is moved along with the locus of operation to which is was taught beforehand to the motor of each shaft of Manipulator RM, if the welding start signal St is inputted. This motion-control circuit MC outputs the electrical-potential-difference setpoint signal Vs, the regular feeding speed setting signal Ws, and the output start signal On to robot interface circuit IFR simultaneously." See paragraph 0005 of Uesono. Simply stated, Uesono discloses the control mechanics of a position control system, but fails to disclose a dedicated separation control system as is claimed by the Applicant.

Applicant further asserts that the position control system and separation control system are not equivalent. Within the specification, Applicant provides detail that the separation control system is not equivalent to a general position control system stating "...the torch pull-up velocity command TUVC 222 and the usual operation velocity command TNVC 223 are *input separately*, and the torch pull-up velocity command TUVC 222 is outputted only when the robot controller 10 performs the such controls to move the welding torch 4 in the direction separating

from the base material 7, *but not outputted in the usual operation time.* Hereby, it is possible to heighten the velocity follow-up performance in movement of the welding torch 4 by the torch separation control block 224". See paragraph 0175 of the published application. Thus, at certain times and under certain conditions, the separation control block will assume control and change the functionality of the claimed invention. As a result, the functionality between the position control system and separation control system can not be equivalent. Accordingly, Uesono fails to adequately rise to the level of disclosing both a position control system and a separation control system. Therefore, as Uesono fails to disclose every limitation of claim 1 and 6, Uesono fails to anticipate claims 1 and 6.

Claim 2 depends directly or indirectly on claim 1, and claim 7 depends directly on claim 6, they are thus patentable for at least the same reasons as the parent claim.

Claims 4, 5, 9 and 10 stand rejected under 35 U.S.C. 103(a) over Uesono, in view of Hosoi et al. (JP Patent No. 411070490), hereinafter "Hosoi". For at least the following reasons, the Examiner's rejection is respectfully traversed. The asserted combination of Uesono and Hosoi, independently or in combination, does not teach, suggest, or otherwise render obvious or predictable the claimed invention.

As asserted above, Uesono fails to disclose that "the controller includes, separately from the position control system, a dedicated separation control system" as limited in claims 1 and 6. Additionally, Hosoi fails to disclose a dedicated separation control system. Thus, even if Uesono were combined with Hosoi, a controller having "separately from the position control system, a dedicated separation control system" would not be taught, suggested, or otherwise rendered obvious or predictable by the resulting combination. As a result, the prior art of record fails to render claims 1 and 6 obvious.

Additionally, as claims 5 and 10 depend from claims 1 and 6 respectively, claims 5 and 10 fail to be rendered obvious by the prior art of record for at least the reasons entered above.

Regarding claims 4 and 9, Applicant respectfully asserts that the combination fails to address any functionality relating to "preventing erroneous collision detection" as amended in claims 4 and 9. Applicant states "if a collision detecting threshold is set in disregard of the vibration due to the spring component of the reduction gear, there is possibility of erroneous detection in which the collision is detected though there is no collision." See paragraph 0217 of the published application. Applicant further states "it is possible to prevent the erroneous detection of collision when the dynamic frequency of the robot comes close to the resonance frequency of the reduction gear spring component." See paragraph 0260 of the published application.

Regarding the combination of Uesono and Hosoi, as can best be understood, Uesono discloses a method of controlling or starting an arc in a welding robot while Hosoi discloses a method for detecting collisions of a robot and reducing reaction time during a collision to limit torque load that robot is subjected. Thus, the combination would lead one to a device that decreased the start time for generating an arc while decreasing reaction time for collisions.

The claimed invention and the combination deals with collisions of a robot and controlling thereof, but the claimed invention goes beyond ordinary collision detection and eliminates false-positive readings that may cause delays and/or safety hazards. As a result, even if Uesono were combined with Hosoi, the combination would lead one to a device that detects collisions but fails to prevent "*erroneous* collision detection" as claimed by amended claims 4 and 9. As a result, the prior art of record fails to render claims 4 and 9 obvious.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the

application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned agent to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 16-0820, our Order No. NGB-40647.

Respectfully submitted,

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